

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

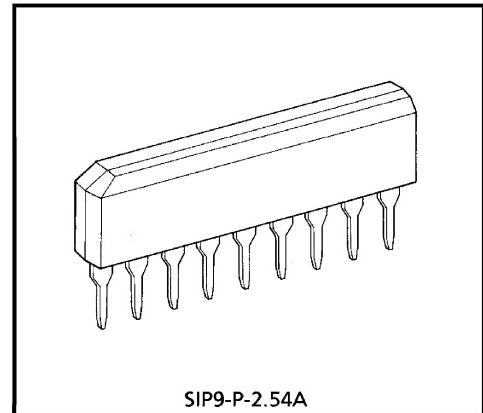
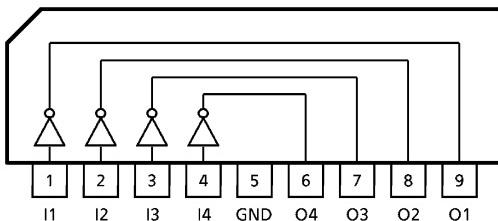
**TD62551S, TD62553S, TD62554S, TD62555S****4CH SINGLE DRIVER : COMMON Emitter**

The TD62551S are comprised of four NPN transistor arrays.

Applications include relay, hammer, lamp and display (LED) drivers.

**FEATURES**

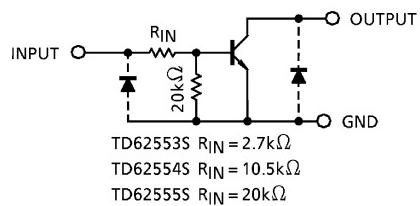
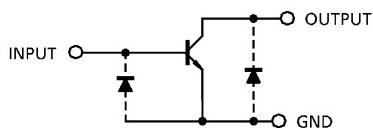
- Output current (single output) 150mA (Max.)
- High sustaining voltage output 25V (Min.)
- Low saturation voltage  $V_{CE}(\text{sat}) = 0.5\text{V}$  @  $I_{OUT} = 50\text{mA}$
- Inputs compatible with various types of logic.
- TD62551S : External
- TD62553S :  $R_{IN} = 2.7\text{k}\Omega$  .... TTL, 5V CMOS
- TD62554S :  $R_{IN} = 10.5\text{k}\Omega$  .... 6~15V PMOS, CMOS
- TD62555S :  $R_{IN} = 20\text{k}\Omega$  .... 12~24V PMOS
- Package type-S : SIP-9 pin

**PIN CONNECTION**

Weight : 0.92g (Typ.)

**SCHEMATICS (EACH DRIVER)**

TD62551S



(Note) The input and output parasitic diodes cannot be used as clamp diodes.

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MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	$V_{CEO}$	25	V
Collector-Base Voltage	$V_{CBO}$	35	V
Collector Current	$I_C$	150	mA / ch
Input Voltage	$V_{IN}$ (Note 1)	20	V
Input Current	$I_{IN}$ (Note 2)	10	mA
Power Dissipation	$P_D$ (Note 3)	0.75	W
Operating Temperature	$T_{opr}$	-40~85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

(Note 1) Except TD62551S

(Note 2) Only TD62551S

(Note 3) Delayed above  $25^\circ\text{C}$  in the proportion of  $6.0\text{mW} / ^\circ\text{C}$ .RECOMMENDED OPERATING CONDITIONS ( $T_a = -40\sim85^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Voltage	$V_{CEO}$	—	0	—	25	V
Collector-Base Voltage	$V_{CBO}$	—	0	—	35	V
Collector Current	TD62551S	$I_C$	0	—	100	mA / ch
	TD62553S					
	TD62554S					
	TD62555S					
Input Voltage	TD62553S	$V_{IN}$	0	—	20	V
	TD62554S					
	TD62555S					
Input Current	TD62551S	$I_{IN}$	0	—	5	mA
Power Dissipation	$P_D$	—	—	—	0.27	W

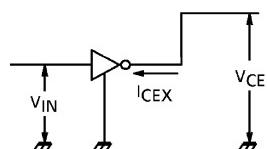
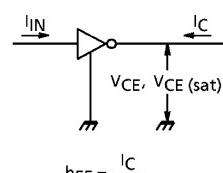
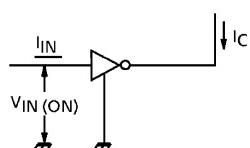
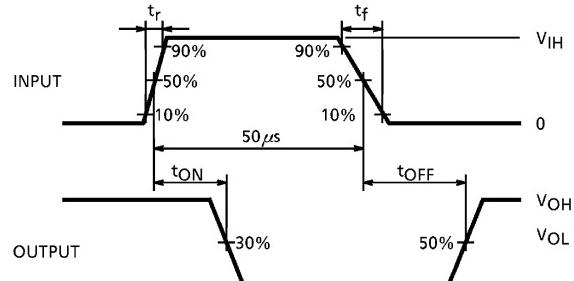
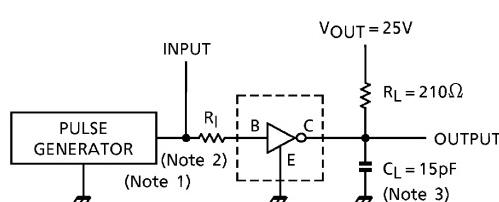
ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	$I_{CEX}$	1	$V_{CE} = 25\text{V}, V_{IN} = 0\text{V}$	—	—	10	$\mu\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE}$ (sat)	2	$I_{IN} = 0.5\text{mA}, I_C = 10\text{mA}$	—	0.15	0.2	V
			$I_{IN} = 2.5\text{mA}, I_C = 50\text{mA}$	—	0.35	0.5	
DC Current Transfer Ratio	$h_{FE}$	2	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	60	—	400	—
				50	—	400	
Input Voltage	TD62553S	$V_{IN}$ (ON)	$I_{IN} = 0.5\text{mA}, I_C = 10\text{mA}$	1.7	2.1	2.5	V
	TD62554S			4.4	6.0	7.6	
	TD62555S			7.7	10.7	13.8	
Turn-On Delay	$t_{ON}$	4	$V_{OUT} = 25\text{V}, R_L = 210\Omega, C_L = 15\text{pF}$	—	100	—	ns
Turn-Off Delay	$t_{OFF}$			—	500	—	

(Note 1) Except TD62551S.

(Note 2) Only TD62551S.

## TEST CIRCUIT

1.  $I_{CEX}$ 2.  $h_{FE}$ ,  $V_{CE}(\text{sat})$ 3.  $V_{IN}(\text{ON})$ 4.  $t_{ON}$ ,  $t_{OFF}$ 

(Note 1) Pulse Width  $50\mu s$ , Duty Cycle 10%  
Output Impedance  $50\Omega$   
 $t_r \leq 5\text{ns}$ ,  $t_f \leq 10\text{ns}$

(Note 2) See right.

(Note 3)  $C_L$  includes probe and jig capacitance.

## INPUT CONDITION

TYPE NUMBER	$R_I$	$V_{IH}$
TD62551S	$2.7k\Omega$	3V
TD62553S	$0\Omega$	3V
TD62554S	$0\Omega$	10V
TD62555S	$0\Omega$	14V

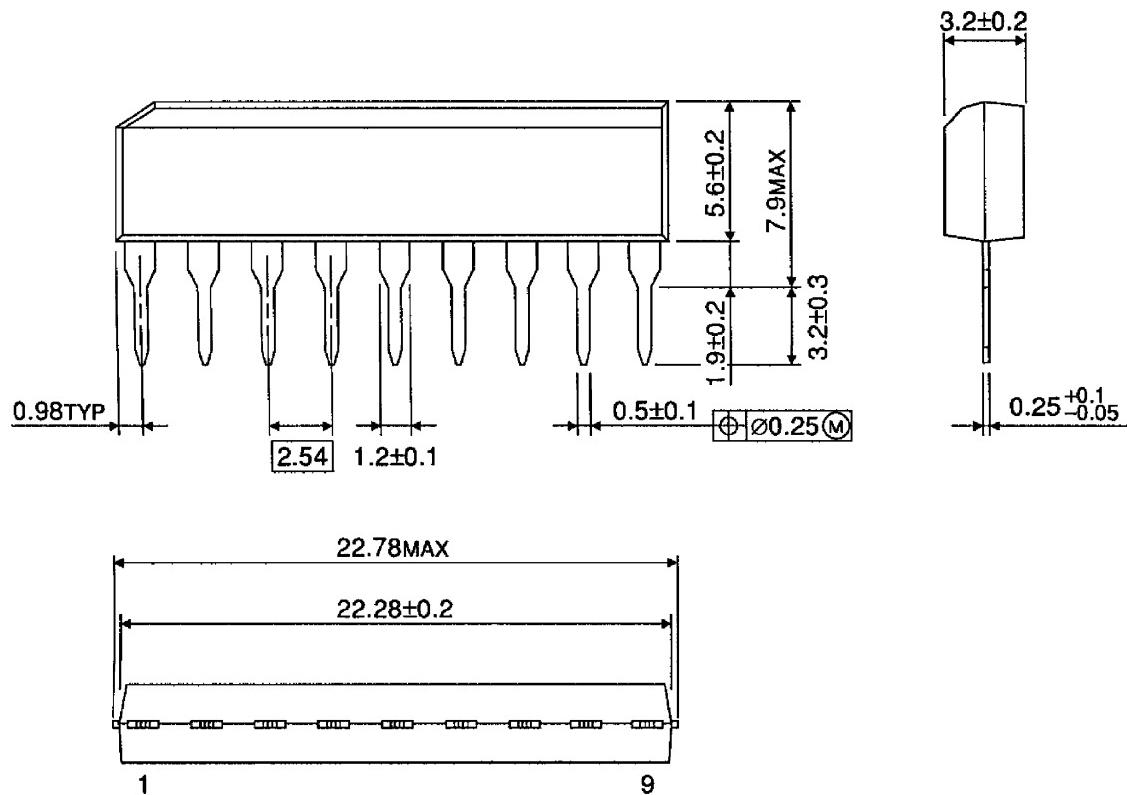
## PRECAUTIONS for USING

Utmost care is necessary in the design of the output line,  $V_{CC}$  and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.

## OUTLINE DRAWING

SIP9-P-2.54A

Unit : mm



Weight : 0.92g (Typ.)

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